CHAPTER 1: THE DEVELOPMENT OF KNOWLEDGE INTENSIVE BUSINESS SERVICES: AN INTERNATIONAL PERSPECTIVE

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THE HISTORICAL SHIFT IN ECONOMIC STRUCTURE AND THE GROWING IMPORTANCE OF SERVICES

Since the final decades of the 20th Century, we have witnessed an unprecedented growth in the service sector at the expense of manufacturing and agriculture. In this regard, some scholars have described this change as a 'service sector revolution' (Chesbrough–Spohrer, 2006). In a rather simplistic way, the wealth of nations can be attributed to agriculture two centuries ago, to manufacturing a century ago, and now to the service sector, which produces 70-80 % of GDP in developed economies. In contrast, the share of the service sector in GDP in developing countries is 52 %, and in the Central and Eastern European Post-Socialist countries it ranges from 58.4 % to 62.9 %. Another noticeable feature of these changes is the rather different development dynamics in the manufacturing and the service sectors. For example, in the UK, between 1998 and 2004, the Knowledge-intensive Business Service (KIBS) sector experienced 23.6 % productivity growth accompanying a 20.2 % increase in employment. On the other hand, 28.8 % productivity growth and a 22.8 % decline in employment were reported in the manufacturing sector (Sako, 2006: 500).

With regard to the unbundling of corporate functions relative to support activities in a firm's infrastructure and administration, the globalization of the service sector is a rather new phenomenon, driven by the following factors:

(1) Globalization of the labor market or the Great-doubling in the international labor market. Following 1989, instead of 1.48 billion people, 2.93 are competing for work and intensifying wage competition globally (Freeman, 2005).

(2) The general use (due to the radical cost reduction) of ICT in company practices has speeded up the delocalization (outsourcing/off shoring) not only of the 'primary activities' (e.g., production) in the global value chain (GVC), but also

the 'support activities' in the administrative functions (Gospel–Sako, 2008: 2–4).

(3) In the emerging markets, the social and economic actors (governments) are looking for new development strategies (a new path of economic development) aimed at improving their position in the GVC in supplying higher-value-added products and services. With the help of this new policy orientation, the CEE countries, including Hungary, intend to get away from a situation of 'locking (...) into economic activities with low-value-added/productivity growth and, thus, undermining future sustainable growth' (Kattel–Reinert–Suurnal, 2009: 2).

(4) The rapid development of 'modularization' or 'networking' via various types of organizational and managerial innovations in global corporations is continuing. This process is driven by both the cost-reduction and the transformation of firms (e.g., a focus on the core competences in both the 'primary' and the 'support' activities).

Radical changes in the nature of the global labor market are regarded as a key factor in the high speed of the internationalization of services. As a result of the participation of China, India, and former Soviet-bloc countries in the global labor market, today, 2.93 billion people are in competition for work, while only 1.46 billion workers were active in the global labor market before these historical changes. Richard B. Freeman (2005) labelled this enormous shift in the global labour market as a 'great doubling' with a far reaching impact on labor in both the developed and developing economies. In the countries noted above, before the collapse of the state-socialist political-economic system, and in other countries before the end of their economic isolation (e.g., India), the workforce rarely competed directly with those in the developed countries. One of the most important impacts of this historical change in the global labor market is increased wage competition not only for low-level blue-collar jobs in the manufacturing sector but also for the best- and worst-paid white-collar jobs. Contrary to widespread public belief, these developing (or emerging) economies are increasing their highly skilled labor force quite quickly, with the future aspiration to improve their present position in the GVC of both manufacturing and services. In this regard, it is important to stress the following: even before the 2008 global financial and economic crisis, China launched various initiatives to increase the share of high-value-added products in total exports and made remarkable progress in R&D (e.g., nanotechnology; more than 750 MNCs created R&D capacity). In addition, by 2010, the number of Chinese PhD students in engineering and

natural sciences will outstrip that in similar categories in the U.S.A. Finally, it is noteworthy that, besides China, Indonesia and Brazil had doubled the number of university graduates between 1980 and 1990.

ICT and modularization (or networking) of business organizations are important drivers and/or enablers of the delocalization (outsourcing/off shoring) of services. The dramatic decline in telecommunication costs, the decreasing importance of physical distance (the 'death of distance'), and the extensive use of ICT assist in the geographical redistribution of data storage and processing (e.g., outsourcing the data processing activities of accounting and wage departments, medical diagnosis, and logistical activities). Finally, ICT facilitates the standardization of services. This is the process of 'productizing services' in the service sector. However, the infiltration of servicing is also evident in the manufacturing sector. For example, among such globally well-known manufacturers as the American IBM or the German Siemens, the fastest growing aspect of their turnover is generated from service activities. This process is often called 'servicing products.'

In spite of the fact that the service sector covers a greater variety of activities than manufacturing, only 10% of the service sector is involved in international trade, while the equivalent figure for manufacturing is more than 50% (UNCTAD, 2004: 97). The smaller share of the service sector in international trade may be explained by the special characteristics of its products. In the majority of cases, it is difficult to store a significant element of the service sector's product due to the fact that the production and consumption of services take place simultaneously. This feature of the service sector results in weak tradability; therefore, at the beginning of the 21st Century (2003), despite the heavy reliance on the use of ICT, services represented only 1.8 billion USD in the world trade, in contrast to the 7.4 billion USD share of the manufacturing sector (WTO, 2005). Despite these difficulties, the share of Foreign Direct Investments (FDI) in service activities increased in the last decades of the 20th Century. For example, in the 1970s, the sector represented only 25% of total inward FDI, while by 2002 this share had increased to 60% (UNCTAD, 2004). The role of FDI is especially important in the field of business services (e.g., in such sub-sectors as transportation, telecommunications, real estate, catering, and hotels).

Governments in the emerging markets are designing new development (modernization) strategies aimed at moving up on the GVC and shifting from the 'low-skill' to the 'high-skill' equilibrium growth model in the CEE countries. The following table accurately illustrates the possible steps involved in moving up in the GVC in the field of business service activities.

Table 1: Movement along the value chain of business services

IT Services	BPO	KPO
IT infrastructure Software applications development Hosting Data entry and conversion	Call centers Horizontal back-office processes (e.g., payroll administration, accounts payable) Vertical business process (e.g., claims handling in insurance)	Research & Development Engineering design Data analytics and data mining Advanced processes in legal, medical, biotechnical, and pharmaceutical sectors

Source: Sako, 2009: 17.
Note: BPO= Business Process Outsourcing, KPO= Knowledge Process Outsourcing.

It is quite probable that the radical changes in the global labour market and the impact of the global financial and economic crisis – in spite of the temptations of 'economic nationalism' experienced in some countries – may result in only a temporary slowdown and stronger competition and not a reversal of the trend towards the delocalization of business services. In this context, the organizational innovations and the knowledge development practice in the KIBS firms are playing a key role in improving the competitiveness and forward movement on the GVC of business services.

THE HETEROGENEOUS CHARACTER OF SERVICES AND INNOVATION

Characterizing the service activities in general, Korczynski (2002) (cited by Flecker–Holtgrewe–Schönauer–Dunkel–Mail, 2008: 103) identifies the following basic features of services:

- 'intangibility' – the product of service work is not, or is only partly, of a tangible nature,
- 'perishability' – the product is 'temporary' and, thus, cannot be stored,
- 'variability' – the product is not homogeneous, for it can vary according
- 'simultaneous production and consumption' – the product is produced and consumed in one and the same situation ('uno-actu' principle),
- 'inseparability' – the product is produced by both a service provider and a receiver (co-production).

Due to the great variety in the form and content of services, it is extremely difficult to identify and assess the innovations in the field of service activities. To overcome the problems related to the heterogeneity of the service sector, Salter and Tether (2006: 9–17), instead of using a universally accepted definition of services, made a distinction among the following main clusters of services:

- Traditional services
- Systems firms
- Knowledge-intensive business service (KIBS) firms

TRADITIONAL SERVICES

The overwhelming majority of service firms are small companies satisfying the needs of their local markets and competing with their very similar counterparts. They are often not very sophisticated in terms of their technology base, organisational arrangements and innovation strategies. According to the authors 'This local-provisions to serve local-needs has arguably led to a form of low-quality lock-in (...) identified as the 'low-skill equilibrium' – in which the

majority of enterprises staffed by poorly trained managers and workers produce low quality goods and services' (Salter–Tether, 2006: 11). It is interesting to note however that what is missing in these small traditional service firms is not only the necessary professional-technical skills as social preconditions for innovation, but – particularly – the necessary social skills (e.g. ability to perform teamwork, capacity to solve workplace conflicts, and communication skills).

The innovation capacity of these firms is limited by their financial and skill resources, by the needs and willingness to pay of the actors operating in their local environment. Salter and Tether describe this complex lock-in situation as follows: 'these firms are often locked into this situation by a combination of weak managerial and workforce skills, coupled with undemanding customers, all of which means the firms have neither the incentives nor the abilities to escape into higher value added activities through innovation and developing more sophisticated technological and organizational structures' (Salter–Tether, 2006: 2).

To overcome the problems related to knowledge shortage in small traditional service firms, it is necessary to call attention to the role of the franchise and company networking in speeding up knowledge transfer and development. 'Franchise contracts' may enlarge the available knowledge pool and speed up the diffusion of the new working practices as well as help identify the conditions of brand use, including the methods and routines of the new firm establishment. Another important facilitator of knowledge transfer is networking or company group membership. Organizations operating as a company group member (e.g., convenience store chains) may disseminate knowledge faster and improve their innovation performance better than a single firm operating alone (Nielsen–Lundvall, 2007: 74).

In spite of the difficulties raised above regarding the low innovation capacity of traditional service firms, some of them are able to create a new path of development and break with the practice of low-cost and low-quality service ('low quality lock-in'). For such firms, the benefit margin of innovation activities could be quite high.

SYSTEM FIRMS

Previously, we emphasised that many services are dominated by micro- and small firms that satisfy the needs of the local market and belong to a class of firms called 'neglected innovators.' However, 'system firms' operating in the service sector use both high-tech and advanced organizational and managerial practices. As Salter–Tether (2006: 13) reported, 'These services include banking and insurance, super market-retailing and airlines ... these industries typically involve very highly developed division of labour, sophisticated technologies including ICT and complex organizational forms.' System firms represent two bureaucratic forms of organization. Both are characterized by varying degrees of innovation and learning capacity. Mintzberg (1979, 1983) labelled these forms of organization as a 'mechanistic' and a 'professional bureaucracy.' According to the latest survey data comparing the models of work organization in Europe, work in a 'mechanistic' bureaucracy is standardized through the use of formal job descriptions and rules imposed by management. The labour process is characterized by a higher degree of centralization and limited autonomy of employees as regards how to carry out their tasks and the pace of their work. On the other hand, in the case of a 'professional' bureaucracy, centralization is lower '... and behaviour is regulated and standardized through the acquisition of standardized skills and the internalization of professional norms and standards of conduct. As a result, operating procedures are rather stable and routine, in spite of the considerable autonomy in the work' (Valeyre et al., 2009: 9).

This bureaucratic mode of coordination significantly increases the time span in which these firms can react to the fast changing needs of their environment. Therefore in markets dominated by system firms it often occurs that a newcomer implements a radical innovation and thus gains significant market share. As an example from the recent past, the authors cite the case of RyanAir and easyJet and the model of low cost carriers.

PROFESSIONAL SERVICE FIRMS OR KNOWLEDGE-INTENSIVE BUSINESS SERVICE (KIBS)

Knowledge intensive service firms operate mainly in such sectors of the economy as legal and accountancy services, engineering and design, advertising, market research and management consultancy. It is important to stress the supportive role these firms undertake in the innovation activities of other firms from other sectors. They operate as a knowledge broker transferring and diffusing both leading edge technological and non-technological innovation across the economy.

The authors distinguish professional firms as an important category of knowledge intensive services firms. These can be characterised by highly qualified staff and an organisational model based upon the principles of Mintzberg's professional or ad-hoc organisational model. The knowledge of the employees is the most important resource of the firm, which together with the organisational model, is key to the survival of these companies. The relationship with clients and other professional partners is also very important, since knowledge is often co-produced by them during the project. Given that teamwork and project-based work are the most common forms of business cooperation, this also increases the importance of the social and tacit knowledge embedded in the operating routines and organisational culture of the firm. Individual and collective knowledge, close relationships with customers and other forms of professional networking are the main source of competitive advantage, which is ‚unique, rare and difficult to imitate' (ibid. p. 15).

Project-based work raises the importance of knowledge management systems through which unique and context-specific knowledge can be used from one project to another. The same is true for knowledge sharing within the organisation as the composition of the teams may vary project by project. As the authors put it: „... the knowledge and skills needed to perform some projects can be highly specific and localized. Other projects, however, may require more general knowledge that will be applicable across many different projects. The fundamental challenge for these professional organizations is to translate project level learning into organizational capability' (ibid. p. 16.).

According to Toivonen (2006: 5), professional service firms can improve their innovation activities in the following ways:

- 'direct transfer of expert knowledge, i.e., the traditional model of consulting practice, experience sharing, and carrying experiences and ideas from one context to another,

- benchmarking, where the process of identifying and focusing on 'good practice' can be established through an intermediary,

- brokering, putting different sources and users into contact with each other,

- diagnosis and problem clarification, helping users articulate and define the particular needs in innovation in such a way that external resources and opportunities can be effectively used,

- change agency, where organizational development can be undertaken with help from a neutral outside perspective.'

The key role of the rapid development of information and communication technologies (ICT) has tremendously improved knowledge management in general (e.g., the handling, storing, and transferring of information has not questioned the importance of the 'proximity principle).' In this regard, Toivonen reported the following: 'The empirical studies made until now indicate that even though there is growing potential for the electronic delivery of graphic, numerical, and text-based information, no part of the KIBS transactions can be carried out without local presence of face-to-face contact' (op. cit.: 9).

SERVICE FIRMS IN HUNGARY - CASE STUDY EXPERIENCES

In what follows we will briefly present two case studies carried out by PhD students within the framework of the TÁMOP research project. The first one represents the abovementioned characteristics of system firms, while

the second one is a good example of Knowledge Intensive Business Service firms. These company case studies also shed some light on how organisational innovations influence firms' performance and what type of problems the actors have to deal with during their implementation. However, the two cases show some differences: while the first one is more problem-orientated (i.e. it describes the failure of the introduction of a new technology), the second one is rather of descriptive character giving a general presentation how a KIBS firm tries to permanently maintain and improve its customer-orientation.

JOINT OPTIMISATION OF TECHNOLOGY AND ORGANISATION: THE CASE OF A MEDICAL AND HEALTH SCIENCE CENTRE (MHSC)

The first case study concerns one of the largest Hungarian medical centres. The centre employs nearly 1,000 physicians and 2,000 health service professionals helping the recovery of a hundred and fifty thousand patients each year. The outpatient clinics provide access to the highest level of medical care to one and a half million people. The Center is divided into five faculties (Faculty of Medicine, Faculty of Dentistry, Faculty of Pharmacy, Faculty of Public Health and Faculty of Health). These faculties are split into a number of sub-divisions and therefore the organisational structure is rather complex. Moreover, they not only differ in their activities and responsibilities but – highly important from our perspective – their working processes can be extremely different and hence they have a variety of expectations of an ICT program that is used in their everyday work. For example some of them use high resolution images such as CT scans in their every day practice while other divisions rarely or never use such images. These differences result in a variety of needs concerning both the hardware and the software infrastructure. It is in this context that the management decided to implement a web-based unified software aimed at making the work of physicians and nurses easier and faster.

The Center had already been using a standardised software application since 1998. The new programme was a new version of this software, the most important difference being that the new version was web-based, which – in theory – allowed staff to handle the documentation of the patients in a much easier way. In order to support the implementation and testing of the new

software, a team was formed including physicians, administrators and nurses with high levels of IT affinity, and IT-personnel from the Centre. Members of the test group agreed to use the new programme during their daily work and had a meeting every 2–3 weeks to share experiences with each other and with the employees of the company responsible for the implementation of the software (hereinafter we will call this company SIC, the abbreviation of Software Implementation Company). This testing phase lasted for several years, with the members of the group continuously providing feedback. Bugs were evaluated and could be reported at the meetings, over the phone or via e-mail, classified as serious, medium and less serious types of errors. Meeting memos were prepared and in the course of the following meeting the professionals from SIC reported on the repairs of reported bugs, and the members of the test group noted the new errors. Participants were trained to use the software and they supported their colleagues at their faculties. Anybody who had access to the older version of the software could ask for access to the new one. The pre-condition was that applicants had to take part in a half-day course at the IT training facility of SIC, where they could receive vital information and obtain the necessary knowledge enabling them to use the software.

Despite all these efforts, the implementation cannot be considered successful; currently less than 100 people use the software on a daily basis. The meetings of the test group became less frequent and then were ended about a year ago.

The issues identified in the case study were quite diverse but strongly interrelated. In order to get a better understanding of the planned changes in the communication system, we have tried to split them according to their nature and categorise them. In this way we have identified technical issues, training related issues, leadership and management problems, issues related to intellectual property rights and difficulties arising from institutional contexts.

Among the technical problems was the fact that the software was less user-friendly in many respects. To run the new system smoothly would require further investment in the hardware infrastructure at the level of individual workstations and high resolution screens and monitors as well as at the server park. These requirements were not taken into account during the design and decision making process for the introduction of a new ICT platform.

Further problems also arose during the phase of implementation and testing. The new software offered by SIC was not ready and could only be described as a

test version at the beginning, and the testing itself was hugely delayed. This created additional complications during the testing phase. As one interviewee noted – as a consequence of the wide scale of specialisation of the different Clinics – the employees had no common expectations regarding the new ICT platform.

Software related training sessions were unsatisfactory and were often limited to a formal presentation of the main functions of the new programme. This was even more important as the inflexibility or lock-in of users was a barrier to switching to the new system. Why would an employee or physician start using new, unfamiliar software as long as the former one still works well? As the two systems operated simultaneously, there was no pressure that would ensure the full-scale use of the new system. However, the most important problem was that a project management with the proper authority was missing. During the implementation of the new system it was critical that there was no appropriate ICT organisation that could have negotiated efficiently on behalf of the Clinic between the two parties, i.e. between the users and the SIC as the seller of the updated software. The most frequently quoted criticism regarding the use of the software was that it did not respond to the needs of the users who were not actively involved in the design and implementation of the new ICT platform. The communication flow between the two parties (users and developers) was unresolved. As we indicated above, what was missing was a knowledge broker between SIC and the representatives of the users who could have translated the user demands in a language understandable to the software developers. An IT department within the Centre could have been an appropriate knowledge broker who understood both the internal logic of a health services institution and at the same time could have phrased the requirements of the client in a form that the provider could understand and act on.

Often bureaucratic barriers slowed down the communication of the development needs between the Centre and the developer company (due to the Centre's hierarchic decision making mechanism). Several of our interviewees reported, for example, that any need they raised related to the development of the software had to be first discussed with the internal management before notifying the IT provider, something that often involved several hierarchical levels. The clinic is a large state organisation with its own bureaucratic operating mechanisms; the information chains are longer and the decision making process is slower due to the multi-level leadership hierarchy. Besides, there is a change in leadership at the clinic every 3 years which makes it difficult to develop a unified, relatively stable strategy.

Finally, the number of those using the new programme on a daily basis does not exceed 50 people. Some people use it occasionally, for example, to display visual information such as x-ray, CT or MRI scans, or to write prescriptions. However, the majority do not use any of its functions. On the other hand, administrative employees, for whom speed is the most important during their work, do not use it at all.

To sum up the experiences related to the implementation of a new ICT platform, the following organisational and management problems were identified as main obstacles to the successful implementation of the programme.

1 The new ICT platform was not yet ready at the start of the implementation; major development tasks still had to be solved in which the Centre was taking part, but the process was not properly controlled and supervised resulting in significant difficulties (e.g. IPR, sharing development costs etc.) throughout the whole period of the implementation process.

2 The software development would have required additional investment in the hardware infrastructure of the Centre, something which was not assessed during the design of the implementation process.

3 The majority of the employees have an aversion towards using the new system even today, as it is unfamiliar and slower than the previous one.

4 It does not make sense to participate in training sessions if the employees of the Centre do not use the system on a daily basis. Knowledge gained at training sessions quickly becomes outdated when it is not used on a daily basis and is not maintained.

5 The developers' work was made even more difficult by the fact that the various faculties of the Centre had different needs that were sometimes contradictory. The Centre is one of the largest health service institutions in Hungary in terms of services, number of employees and patient turnover. The introduction of a new web-based communication system in such a large and complex institution proved to be a rather complicated process requiring longer individual and collective learning capabilities through a high level of involvement of the parties concerned.

6 The successful reorganisation of the everyday communication system with the help of ICT in such a complex organisational and professional setting as the Centre would require the creation of a project organisation. Lacking such a unit, the whole implementation process became stuck, not only in the Centre's

hierarchical-bureaucratic organisational structure, but also in the conflict of interests of various professional groups who had no chance to articulate their opinions and needs.

CUSTOMER ORIENTATION AS A DRIVER OF CONTINUOUS INNOVATION AND ECONOMIC GROWTH: THE CASE OF A HUNGARIAN KIBS FIRM

The KOWOX company offers comprehensive software applications and services in the field of payroll management systems, HRM, working time management, 'cafeteria' management systems (i.e. mixed packages of benefits) and the necessary education and training for the daily use of these software programmes. The company's success can be attributed to its unique history which goes back to the end of 1980s. The idea of managing a payroll system on the basis of a strong IT platform was an internationally innovative one. With this extraordinarily strong IT backing, the development of a payroll application was a significant step forward since it substantially outshone the performance of payroll solutions provided by competitors. This innovative approach was born in a "garage" and sparked the interest of larger companies in this application. The first mover position increased sales of applications substantially. The firm was founded in July 1989 and 70 large companies were already among its clientele.

In the first three years after the foundation of the company, it enjoyed the growing trust of clients, as was clearly illustrated by the fact that the company increased the number of its contracts from 60 to 230 between 1989 and 1992. The number of clients grew continuously during the nineties, reaching 1200 clients by 1998. Up until 1998, the number of employees was still below 50; however, a turning point in growth arrived in 2000 and the number increased to 65, while the number of clients expanded more substantially to 1700. By 2004, the number of clients was approximately 2400; the organisation required additional skilled staff and thus the number of employees rose to 155. Today, KOWOX provides services for 3000 clients and provides smooth payroll management for approximately 1 million employees in Hungary.

The company's organisational structure reflects the importance of continuous learning through experience in the context of a client-centred service development. If a firm intends to create and sustain its innovative milieu, its functional units have to cooperate and share their knowledge with each other. KOWOX has therefore been designing and organising its day-to-day operation in a way that enhances the transfer of the experience and knowledge among the various parts of the firm, relying on a flat organisational structure.

At the beginning of the company's operation, a holistic approach dominated the business, meaning that one person had to acquire as many skills as possible. As time passed and the processes and business operation became more complex (e.g. due to the widening product and service portfolio), more and more functionally separated organisational units evolved with specialised skills and competences. This development has, on the one hand, positive effects as it improves the knowledge pool of the company by opening various channels of communication among highly specialised workers. But; on the other hand, recruiting new employees with the necessary specialised competences has become more and more difficult.

Since KOWOX defines itself as an IT developer and service provider company, underestimating the key importance of the customer service aspect would be a fatal error in a period when the number of clients exceeds 3000. Both old and new clients prefer the fastest and most efficient services. To improve customer orientation, KOWOX established a Customer Relations Management (CRM) unit within the company. When problems arise from the clients' side, CRM (and its call centre division) absorb and collect all necessary information which seems to be relevant to localising the problem, converting it into a feasible task, and what is more important, doing all this in a more efficient way. This is a noticeable step to develop an open innovation practice where it is not only software developers who are involved in the development processes, but also the company's partners and clients.

Employees working in the field of CRM are expected to have all the knowledge that might be needed to solve the problems. Moreover, they have to continually upgrade their skills and improve their knowledge of recent changes, whether this is related to a version change of an application, or to a legislative amendment. (Normally, the issues arising are standard ones that can be resolved routinely.

Nevertheless, there is a formalised way of problem solving if the given issue requires CRM to involve other company units in order to get relevant answers).

Dealing with customer needs is also supported by KOWOX's internal innovative initiatives. For example, before launching the new HRM performance assessment system, the company applied it to its own HR system and offered a unique opportunity for CRM-employees to participate in the testing, as well as to draw lessons from it and learn how it really works. Another step forward was the introduction of the one-stop-shop method. Collecting customer needs at the centre also entails an intensified follow-up function. Although KOWOX provides organised training and exams with certificates, clients often demand support services on the spot. The company therefore not only instructs on its system applications and puts them into use, but also updates them, which can be also seen as a service novelty.

CRM as a tool for more demand-driven (client-centred) innovation has become a growth-engine in the life of KOWOX, and the experience gained has also triggered the introduction of more vigorous knowledge management and training activities by maintaining the buoyancy of growth.

In order to develop a self-dynamic learning capability, firms increasingly recognise the value of a permanent collaborative process between customers and service providers (Lusch et al., 2008). This approach has been developed in an original way at KOWOX. In the first few years, there were visible shortcomings in the systematically coordinated development, i.e. different and not clearly conceptualised development ideas came to light each year from the software development side. It required a managerial effort to collect more information and to derive viable opportunities from this information in an intelligent way. Subsequently, a more systemic knowledge management has evolved to facilitate a better knowledge transfer that also drives creativity and innovation. The major elements of the systemic effort were as follows: process monitoring and recording, documenting and assessing, and then making the formalised knowledge base available to affected employees.

In addition to this innovation in CRM, another organisational innovation also took place when the firm started to recognise the importance of the distinction between operational and strategic decisions (taking into account, for example, product and service life cycles) at the level of product and service development.

To this end, KOWOX set up an integrated development environment (IDE) as a form of organisational innovation (Lynch, 2007) which serves as an inspiring climate for its established developer team. This team (approx. 18 workers) enables the company to react more flexibly to legislative changes by carrying out the necessary modifications in the applications offered to clients.

It is perhaps even more important that the use of the project-based approach (Martinsuo et al., 2006) started to pervade the company's working practice. Thinking and working with projects not only helps the employees' work, but a project perspective also guarantees that customers will receive more attention and will be given higher quality service. In 2011, the company took a further step by establishing a program for technology development with the creation of a totally new organisational unit, the Research and Development Directorate, responsible for managing the methodology of software development.

The knowledge of how to deal with the complex set of problems involved in project management has been developed as a kind of "internal breeding". This was also true in the case of payroll and labour issues at the beginning, i.e. KOWOX hired employees and then trained them how to use its different software packages, hence the professional skills have been mainly incrementally acquired.

The training activity of the company was shaped by the experience of how clients can cope with software and service developments, not to mention the difficulties related to always being up-to-date with the changes in the payroll, labour and HR-related regulatory environment. By collecting experience and problematic issues recurrently arising KOWOX also developed shorter and longer training courses with the aim of coping with such problems in the future. Training courses are designed (i) to help old and new clients to rapidly obtain knowledge of products and services, whereby the firm's sales potential is strengthened; (ii) to offer 1–3 day training courses on indispensable regulatory changes and on upgraded services; and (iii) to provide accredited OKJ (Hungarian Training List) training (e.g. payroll administrator, social security administrator, and social security and payroll specialist) and professional training courses for users on, for instance, the cafeteria systems. In this regard, in 2005, the company received the institutional accreditation status issued by The National Institute of Vocational and Adult Education. This status is recognised as the highest qualification and valid up until 2013.

Instead of following the old routine when knowledge was given in just one comprehensive package to each client and then they were left on their own to get on with it, the current training courses are organised in a modular way. Despite the fact that fast changing Hungarian legislation does not facilitate the development of highly standardised training, the modular method helps to deliver thematically standardised hands-on training packages. Additionally, this method gives clients an opportunity to plan better. In order to save client companies extra working hours spent on courses delivered outside the firm, KOWOX provides training on the spot and combines different forms of e-learning (e.g. online training complemented with interactive online conferences with live streams).

In the service economy, outsourcing some activities that were once internal business functions of firms has become a prevalent practice worldwide. The basic driving factors behind outsourcing are competition and the pressure for permanent cost-reduction without endangering product and service quality. The company recognised the importance of this market opportunity and provides an outsource service (KOWOXSOURCE) in the fields of payroll and complex HR administration (e.g. hiring, time and attendance accounting). Today, approximately 50 per cent of KOWOX's annual turnover is generated by the outsourced service. All clients who use the outsourcing services of the firm have online access to their own systems. It is important to emphasise that the company always uses hybrid methods of service and application provision, because of the fact that there are, on the one hand, companies which demand customised versions of applications and services, as well as others which require cheaper standardised solutions.

CONCLUSION

This section provides a brief overview of the expansion of the service sector in the developed economies and on its main drivers such as the globalization of the labour market, the general use of the ICT, companies seeking new development strategies to achieve a higher position in the global value chain(s) and the growing importance of modularisation and networking. Similarly to manufacturing activities, services are also outsourced to a growing extent. A shift can be observed towards the outsourcing of service activities with increasingly higher added

value. Sako describes this as a shift from outsourcing basic IT services to business processes and then to knowledge process outsourcing.

It is in this context that the analysis of the service sector gains more and more importance in various fields of social sciences. However, we still lack a consensus on the most important characteristics of the firms operating in this sector which may serve as a basis for a classification of them. In this study we adopted the classification of Salter and Tether (2006). The authors distinguished three types of service firms: traditional service firms consist of small companies operating on the local market for low cost and competing with other local and small or micro companies. These firms are extremely sensitive to fluctuations in local demand. As the employees are generally not very skilled there is not much room for manoeuvre for innovation or the creation of new development paths.

System firms operate most often in such sectors as banking and insurance, super market-retailing and airlines. They can be characterised by a highly developed division of labour, the use of leading edge technologies and sophisticated work organisation models. These companies are significantly larger in terms of the number of employees or the volume of annual turnover. Because of their bigger size, their adaptability and innovative capability are limited by both internal and external bureaucratic restrictions. Internal bureaucracy means that among these firms we can rarely find flat organisations, and multilayered management hierarchies slow down and complicate the decision making process. It is also a common characteristic of these companies that they are large enough for national regulations to affect their activities in various forms. Salter and Tether cite the example of IKEA and the UK planning authorities where the latter did not allow IKEA to build its network of large out-of-town stores as they had typically done previously.

The third type of service firms represent the most innovative company cluster within the sector. These firms operate mainly in such sectors of the economy as legal and accountancy services, engineering and design, advertising, market research and management consultancy. Employees' knowledge and the work organisation model are the most important source of competitiveness for these firms. KIBS firms are not only innovative in their own right but also play a crucial role in the diffusion of innovation by supporting other firms' innovation activities. Another important feature of these firms is their strong customer focus. Clients are not only buyers of their services but are also actively involved in creating the firms' services and in some cases even the business process and work organisation.

After reviewing these main international trends in the recent evolution of the service sector, we briefly presented and assessed the organisational innovation that has taken place in two service companies. The case of the Medical and Health Science Centre, which is a large public health care service institution, may serve as an example of the so-called system firms. The case illustrates the difficulties the Centre had to face during the implementation of a technological innovation, i.e. a new web-based software platform. The implementation process highlighted many aspects of radical innovation in a complex organisation such as the Centre, where various problems may arise. The most important one is perhaps when the organisation is not adjusted to technological change. The problems accompanying the technological changes were as follows: on the one hand a project management organisational unit responsible for supervising the implementation process was not established, and on the other hand the different needs of the various clinics of the centre were not assessed and evaluated before the implementation. These organisational deficiencies led to a kind of entropy where the original goal was lost in the labyrinth of the internal bureaucracy and in the conflicting interests of the actors affected by the changes.

The second case study dealt with a Hungarian-owned high-growth SME which became a market leader in the field of payroll, HR, working time and administration management systems. KOWOX is an illustrative example of the knowledge intensive service company where a strong customer focus shapes the work organisation and sometimes leads to the launch of new business activities. The management of the company soon recognised that the quality of the customer relationship is a key factor in the firm's long term success. Accordingly, the history of the company can be described as a constant search to improve customer satisfaction. This is well reflected in the gradual organisational restructuring leading to the establishment of such new organisational units and solutions as the CRM Directorate, the Integrated Development Environment, internal innovative initiatives, internal breeding, the one-stop-shop method, project-based work organisation, and finally the setting up of a separate R&D Directorate, rarely found at other service firms. These forms of both structural and procedural organisational innovation were designed to increase customer satisfaction and to ensure the smooth operation of the internal knowledge management system. Each project contributes to a growing knowledge which is partly client-specific and partly more generally usable. The core role of the knowledge management system

is to codify the more general knowledge accumulated and make it available to the community of the firm's employees. The close cooperation between the company and its clients also helped to create more customer-tailored service solutions and new business activities (e.g. training and outsourcing) which thus acquired a growing share in the company's turnover.

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